

CLAIMS

1. A coated super-hard abrasive comprising a core of super-hard abrasive material, an inner layer of a metal carbide, nitride, boride, carbonitride or boronitride chemically bonded to an outer surface of the super-hard abrasive material and an outer layer of a metal, metal alloy or a combination of metals or metal alloys deposited on the inner layer.
2. A coated super-hard abrasive according to claim 1, wherein the metals or metal alloys that can be applied as an outer layer are selected from the group comprising metals from group IVa, Va or VIa transition metals, metals from the first row transition metals (Ti to Cu), and elements from groups IIb and IVb of the periodic table, and alloys thereof.
3. A coated super-hard abrasive according to claim 2, wherein the alloys comprise additional metals selected from the platinum group metals and metals from group Ib of the periodic table.
4. A coated super-hard abrasive according to any one of the preceding claims, wherein the outer layer is deposited by physical vapour deposition.
5. A coated super-hard abrasive according to claim 4, wherein the outer layer is deposited by PVD sputter coating.
6. A coated super-hard abrasive according to any one of the preceding claims, wherein the super-hard abrasive material is diamond or cBN based.
7. A coated super-hard abrasive according to claim 6, wherein the super-hard abrasive material is selected from the group comprising diamond or cBN grit, a PCD substrate, a PCBN substrate, a

thermally stable PCD (TSPCD) substrate, a CVD diamond film, and a single crystal diamond substrate.

8. A coated super-hard abrasive according to any one of the preceding claims, wherein the inner layer is formed from an element capable of forming (singly or in combination) carbides, nitrides or borides to the surface(s) of the abrasive material when applied as an inner layer using a hot coating process.
9. A coated super-hard abrasive according to claim 8, wherein the element is selected from the group comprising groups IVa, Va, VIa, IIIb and IVb of the periodic table.
10. A coated super-hard abrasive according to any one of the preceding claims, wherein the inner layer is a titanium or chromium carbide coating in the case of a diamond based core, or a titanium or chromium nitride, boride or boronitride coating in the case of a cBN based core.
11. A coated super-hard abrasive according to any one of the preceding claims, wherein the outer layer comprises titanium, tungsten, copper, or combinations thereof.